

Treatment of obesity in adolescents: where should interventions focus?

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Treatment of obesity in adolescents, where should interventions focus?

The upward trend in child and adolescent obesity is of global concern, with up to 16% of 10-17 year olds being classified as obese in some countries¹. Given the well-established short and long-term health² and psychosocial³ consequences, the increasing prevalence and the impact on social inequalities in health, there is an urgent need to tackle obesity at an early stage.

Several systematic reviews have summarised the evidence on the effectiveness of weight management interventions for child and adolescent obesity⁴⁻⁶. In general they highlight methodological limitations, with many previous trials not being adequately powered, and interventions lacking a theoretical framework⁶. Trials are particularly sparse among adolescent populations.

The findings from a trial evaluating the Healthy Eating and Lifestyles Programme (HELP), aimed at weight management in obesity 12-18 year olds, is reported in this issue. This trial addresses many of the limitations in previous studies. The 12-week family based intervention is theoretically informed and the trial was adequately powered to detect clinically important outcomes. However, despite promising findings from a pilot study, the definitive trial found no evidence of benefit in terms of BMI reduction, psychological or metabolic outcomes among those in the intervention group, compared to adolescents receiving a single educational session on health eating and physical activity in a primary care setting.

Comprehensive process measures alongside the trial showed high intervention fidelity, suggesting this was not an explanation for the null findings. Relatively low attrition suggests that the trial was also adequately powered. The authors consider one possible explanation for the findings relates to the highly deprived population that took part. This is partly supported by the findings of another systematic review focusing on weight management interventions among adolescents from disadvantaged backgrounds⁷. The quality of included studies was generally low. Nevertheless, a feature of the interventions showing a beneficial effect on BMI was that they were more experiential rather than educational as in HELP.

Within the wider literature, systematic reviews conclude that lifestyle weight management interventions generally do result in modest weight loss among children and adolescents, at least in the short term^{4,5,8}. Evidence on long term outcomes is limited and it is not known whether any short term effects are maintained. A review of child and adolescent weight management studies by the National Institute for Health and Clinical Excellence (NICE) found a small reduction in standardised BMI for children in the intervention compared to those in the control arm at the end of intervention (standardised mean difference = -0.17; CI 95% = -0.30 to -0.04, p = 0.01). However, meta-analysis of data from studies that included a longer term follow up (≥ 6 months) showed a null effect (SMD = -0.07; CI 95% = -0.15 to 0.02, p = 0.12)⁴. Furthermore, even if behavioural interventions resulted in BMI reduction equivalent to the largest upper pooled estimate of effect in meta-analyses (reduction in BMI z-score of 0.3), an adolescent with extreme obesity is unlikely to achieve normal weight by participating⁹. Substantial benefit is only likely if the short term effects are maintained⁸.

A further complication is that the majority of children and adolescents who are obese do not attend or complete weight management programmes. An observational study in five districts in London found that among 285 overweight children identified through school measurements, only a third sought further help, mainly from informal sources¹⁰. Difficulty in referring and uptake of weight management services by children and their families has also been highlighted by service providers¹¹ and by NICE¹². Once recruited, retention of families in programmes is also challenging, with completion rates ranging from 33% to 89% across programmes in one region¹³. Reasons given for non-participation in weight management services mainly relate to lack of time and interest, with some families highlighting the importance of focusing on health rather than obesity¹⁴. A review of qualitative studies¹⁵ highlighted a range of factors, including lack of recognition of obesity, low motivation, or time pressures, as well as service-related factors such as the timing, duration or location of services posing a barrier. Thus, child and adolescent weight management programmes also need to consider how to improve attendance and retention.

In summary, child and adolescent weight management programmes may be effective in some groups, but uptake and completion rates are low. In particular, evidence on the most effective interventions for more disadvantaged groups is lacking. This group are at

particularly high risk of obesity, and unless interventions focus on deprived sub-groups, inequalities in health will widen. Other interventions, including upstream measures and a greater focus on prevention need to be considered and evaluated.

References:

1. Bibiloni MdM, Pons A, Tur JA. Prevalence of Overweight and Obesity in Adolescents: A Systematic Review. *ISRN Obesity* 2013; **2013**: 14.
2. van Emmerik NMA, Renders CM, van de Veer M, et al. High cardiovascular risk in severely obese young children and adolescents. *Archives of Disease in Childhood* 2012; **97**(9): 818-21.
3. Health and Wellbeing of 15 year olds in England: Findings from the What About YOUth? Survey 2014. 2015. . 2015. <http://content.digital.nhs.uk/catalogue/PUB19244> (accessed 08/04/2017).
4. Morgan FW, A; Whitehead, S; Brophy, S; Morgan, H; Turley, R; Kipping, R; White, J; Hollingworth, W. Managing overweight and obesity among children and young people: lifestyle weight management services. Review 1: Effectiveness and cost effectiveness of lifestyle weight management services for children and young people: Support Unit for Research Evidence (SURE), Cardiff University <http://www.cardiff.ac.uk/insrv/libraries/sure/index.html> 2013.
5. Oude Luttikhuis H, Baur L, Jansen H, et al. Interventions for treating obesity in children. *Cochrane Database Syst Rev* 2009; (1): Cd001872.
6. Thomason DL, Lukkahatai N, Kawi J, Connelly K, Inouye J. A Systematic Review of Adolescent Self-Management and Weight Loss. *Journal of Pediatric Health Care* 2016; **30**(6): 569-82.
7. Kornet-van der Aa DA, Altenburg TM, van Randerad-van der Zee CH, Chinapaw MJM. The effectiveness and promising strategies of obesity prevention and treatment programmes among adolescents from disadvantaged backgrounds: a systematic review. *Obesity Reviews* 2017; **18**(5): 581-93.
8. Whitlock EP, O'Connor EA, Williams SB, Beil TL, Lutz KW. Effectiveness of Weight Management Interventions in Children: A Targeted Systematic Review for the USPSTF. *Pediatrics* 2010.
9. Mühlig Y, Wabitsch M, Moss A, Hebebrand J. Weight Loss in Children and Adolescents: A Systematic Review and Evaluation of Conservative, Non-Pharmacological Obesity Treatment Programs. *Deutsches Ärzteblatt International* 2014; **111**(48): 818-24.
10. Falconer CL, Park MH, Croker H, et al. The benefits and harms of providing parents with weight feedback as part of the national child measurement programme: a prospective cohort study. *BMC Public Health* 2014; **14**: 549.
11. National Child Measurement Programme (NCMP), nutrition and healthy weight regional events 2013, 2014.
12. (NICE) NifHaCE. Managing overweight and obesity among children and young people: lifestyle weight management services (PH47). London, 2013.
13. Upton DUPBJPD. Regional Evaluation of Weight Management Programmes for Children and Adults: University of Worcester, 2009.

14. Taylor RW, Williams SM, Dawson AM, Taylor BJ, Meredith-Jones K, Brown D. What factors influence uptake into family-based obesity treatment after weight screening? *The Journal of pediatrics* 2013; **163**(6): 1657-62.e1.
15. Turley R WA, Halstead E, Morgan H, Morgan F, Noyes J, Brophy S, Kipping R, Whitehead S. . NICE Guidance title: Managing overweight and obesity among children and young people: lifestyle weight management services. Review 2: The barriers and facilitators to implementing lifestyle weight management programmes for children and young people. : Support Unit for Research Evidence (SURE), Cardiff University, 2013.